WHAT IS CLAIMED IS:

1. A system for treating a vascular condition comprising:

a catheter including an elongated inner member and at least one flexible longitudinally oriented outer member that is operably attached to a distal portion of the elongated inner member; and

a stent having a proximal end and a distal end, the stent disposed on a distal portion of the flexible outer member of the catheter, wherein when the elongated inner member is retracted, the flexible outer member folds adjacent an inner side of the stent, causing the stent to be deployed.

2. The system of claim 1 wherein the distal portion of the elongated inner member comprises a cap portion.

3. The system of claim 2 wherein the cap portion has a diameter greater than the diameter of the stent when the stent is disposed on the flexible outer member.

4. The system of claim 2 wherein the cap portion has a bullet shape.

5. The system of claim 1 wherein the stent is deployed by causing it to expand from the distal end to the proximal end.

6. The system of claim 1 further comprising a first hub attached to the proximal end of the elongated inner member and a second hub attached to the proximal end of the outer member of the catheter in a configuration so that the hubs can be locked to each other, whereby, when the hubs are in a locked configuration, the flexible outer member is fully extended, and the outer member and the elongated inner member are maintained in a fixed longitudinal relationship to each other.

7. The system of claim 2 wherein the cap portion comprises silicone.

8. The system of claim 1 wherein the elongated inner member comprises one or more materials selected from the group consisting of metals, titanium, metal alloys, stainless steel, nitinol, polypropylene, polyethylene, medically approved polymers.

9. The system of claim 1 wherein the flexible outer member of the catheter comprises braided stainless steel wire.

10. The system of claim 2 wherein the cap portion includes a radiopaque marker.

11. The system of claim 1 wherein the flexible outer member comprises a plurality of wires.

12. The system of claim 1 wherein the flexible outer member comprises a sheath.

13. The system of claim 2 wherein the distal end of the cap portion is sized to expand the stent to a predetermined diameter.

14. The system of claim 1 wherein the outer member is sized to expand the stent to a predetermined diameter.

15. The system of claim 1 wherein the distal portion of the outer member is coated with a drug-eluting polymer coating.

16. The system of claim 15 wherein the drug-eluting polymer coating comprises a therapeutic agent.

17. The system of claim 16 wherein the therapeutic agent is selected from the group consisting of an antirestenotic drug, an antisense agent, an antineoplastic agent, an antiproliferative agent, an antithrombogenic agent an anticoagulant, an antiplatelet agent, an antibiotic, an anti-inflammatory agent, a steroid, a gene therapy agent, an organic drug, a pharmaceutical compound, a recombinant DNA product, a recombinant RNA product, a collagen a collagenic derivative, a protein, a protein analog, a saccharide, a saccharide derivative, a bioactive agent, a pharmaceutical drug, a therapeutic substance, or combinations thereof.

18. The system of claim 6 further comprising a fitting configured to accommodate a syringe on the first hub contacting a lumen through the inner member connecting the fitting and a distal portion of the inner member for delivery of a therapeutic agent.

19. A method for treating a vascular condition, the method comprising:

providing a delivery device including a catheter having an elongated inner member and at least one flexible longitudinally oriented outer member that is operably attached to a distal portion of the elongated inner member and a stent having a proximal end and a distal end, the stent disposed on a distal portion of the flexible outer member of the catheter;

inserting the delivery device through a vessel proximate the target site;

retracting the inner member;

folding the outer member adjacent an inner side of the stent;

deploying the stent as a result of the folding of the outer member.

20. The method of claim 19 further comprising: adjusting hubs on a proximal portion of the catheter to an unlocked position to allow retraction of the inner member.

21. The method of claim 19 further comprising: advancing the elongated inner member in a distal direction until the flexible outer member is fully extended; and

adjusting the hubs on the proximal portion of the catheter to a locked position to allow the catheter to be withdrawn from the patient following stent deployment.

22. A stent delivery device for treating a vascular condition comprising:

a catheter including an elongated inner member and at least one flexible longitudinally oriented outer member that is operably attached to a distal portion of the elongated inner member; and

wherein, when a stent is coupled to a distal portion of the flexible outer sheath of the catheter and the delivery device is positioned proximate a target site, the elongated inner member is retracted, and the flexible outer member folds adjacent an inner side of the stent to cause the stent to be deployed.

23. The device of claim 22 wherein the distal portion of the elongated inner member comprises a cap portion.

24. The device of claim 23 wherein the cap portion has a diameter greater than the diameter of the stent when the stent is disposed on the flexible outer member.

25. The device of claim 23 wherein the cap portion has a bullet shape.

26. The device of claim 22 wherein the stent is deployed by causing it to expand from a distal end to a proximal end.

27. The device of claim 22 further comprising a first hub attached to the proximal end of the elongated inner member and a second hub attached to the proximal end of the flexible outer member of the catheter in a configuration so that the hubs can be locked to each other, whereby, when the hubs are in a locked configuration, the flexible outer member is fully extended, and the outer member and the elongated inner member are maintained in a fixed longitudinal relationship to each other.

28. The device of claim 23 wherein the cap portion comprises silicone.

29. The device of claim 22 wherein the elongated inner member comprises one or more material selected from the group consisting of metals, titanium, metal alloys, stainless steel, nitinol, polypropylene, polyethylene, medically approved polymers.

30. The device of claim 22 wherein the flexible outer member of the catheter comprises braided stainless steel wire.

31. The device of claim 23 wherein the cap portion includes a radiopaque marker.

32. The device of claim 22 wherein the flexible outer member comprises a plurality of wires.

33. The device of claim 22 wherein the flexible outer member comprises a sheath.

34. The device of claim 19 wherein the cap portion is sized to expand the stent to a predetermined diameter.

35. The device of claim 18 wherein the flexible outer member is sized to expand the stent to a predetermined diameter.